

ABSTRACT OF THE DISCLOSURE

A method and system are provided for monitoring erosion of system components in a plasma processing system. The system components contain a gas emitter that can release a sensor gas into a plasma process environment. The sensor gas can produce characteristic fluorescent light emission when exposed to a plasma. The method can evaluate erosion of system components in a plasma, by monitoring fluorescent light emission and a mass signal from the sensor gas. Consumable system components that can be monitored using the method include rings, shields, electrodes, baffles, and liners.